

1] Applications of Data Science (Explain)

→ There are various applications of data science which includes :-

- Healthcare
- E-commerce
- Finance
- Education
- ~~SS~~ Cybersecurity

a.) E-commerce -

Data science helps e-commerce businesses improve customer experience, boost sales, and operate efficiently.

- Dynamic Pricing - Adjust prices based on demand and competition.
- Smart Recommendations - Suggests products based on what customers like and buy.
- Demand prediction - Help stores stock the right time.
- Personalized Ads - Shows ads that match customer's interest.

b.) Finance -

Data science helps banks and financial companies make smarter decisions, reduce risks, and improve customer experience.

- Fraud detection - Identifies unusual transactions to prevent fraud.
- Algorithmic Trading - AI powered systems buy and sell stocks automatically for maximum profit.

- Expense Tracking and Budgeting - Apps like Google Pay analyze spending and give saving tips.
- Risk management - Predicts financial crises and helps banks prepare.

c) Education

Data science is transforming education by making learning more personalized, efficient and engaging.

- Personalized learning - AI recommends study materials based on a student's strengths and weaknesses.
- Student Performance Prediction - Identifies struggling students early and suggests interventions.
- Chatbots for Learning - AI tutors help answer student questions instantly.
- Adaptive Testing - Adjusts exam difficulty based on a student's performance.
- Better Course Recommendations - Suggests relevant courses based on learning history.

2] Libraries of python. for mathematical operations, an array/list, to draw the graph, chart etc.

→ For Mathematical operations. -

- NumPy -
- SymPy
- SciPy
- Math

For Arrays and Lists Handling

- NumPy
- Pandas
- Array

For Graphs and Charts

- Matplotlib
- Seaborn
- Plotly
- Bokeh
- NetworkX